

CODIAC-D-10
D R A F T
1 July 1958

I N T E L L I G E N C E A D V I S O R Y C O M M I T T E E
C O M M I T T E E O N D O C U M E N T A T I O N

The Automation Subcommittee

Introduction

The utilization of mechanical-electrical devices to perform routine tasks faster and more accurately than can human workers has been called automation. Cybernetics research has compared the control system formed by the brain and nervous system with mechanical-electrical communication systems. The results of the marriage of automation and cybernetics has expanded the scope of library service to a partial overlap into the fields of analysis so jealously guarded by the research personnel of the ivory tower era.

However, the research managers have recognized that the documentalist and his mechanized approaches to partial problem solution can make a significant contribution in time savings to the research process. With the diversity of subject confronting intelligence analysis goes hand-in-hand the short deadline imposed by the policy maker. Good policy can only be made through knowledge of all the facts bearing on the decision before the policy maker. It is the duty of the information services to provide to the estimator, and through him to the decision maker, the maximum of time to consider all facets of the problem before the decision must be made. We can best reach this goal by becoming skilled in all time-saving techniques.

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The Committee on Documentation must be continually informed on new techniques and systems to shorten the information-furnishing portion of the intelligence production process. A part of this responsibility falls in the automation and cybernetics field. A subcommittee on automation populated by knowledgeable representatives of the intelligence agencies can deal with the detail of automation research with which the main committee need not and should not become involved.

Program

The following program is proposed for the first year of operation of the Subcommittee on Automation. The Subcommittee would meet once a month and discuss one aspect of automation in depth in addition to such other business as would from time to time be assigned.

- a. First Meeting: Input devices for information storage systems have regulated the speed with which continuous information processing can function. A critical comparison of input devices would be presented.
- b. Second Meeting: A review of the physical methods of storing information in devices. The laws of nature have been applied to information storage such as the laws of heat, light, mechanics, chemistry, acoustics, electro-statics, magnetism and electronics.
- c. Third Meeting: The techniques of display of results of automatized information processes have occupied a sizeable group of researchers. A review of the present state of the art would round out the first quarter's program of study of input, storage and output in mechanized information handling.

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- d. Fourth Meeting: The attention of the Subcommittee during the second quarter would be occupied with the mechanization of routine in-process operations which would help the information services provide faster service. Automatic dissemination would be the subject of the first session.
- e. Fifth Meeting: Continuing the general quarter's subject, this meeting would deal with automatic abstracting. The implication of machine techniques for prediction of missing or garbled words in communications would be included in the presentation.
- f. Sixth Meeting: The quarterly program would be concluded by study of automatic indexing techniques and devices. The construction of authority files using statistical and concordance methods would be emphasized.
- g. Seventh Meeting: The third quarter would be concerned with specialized automatic auxiliary systems. The first session would be on mechanical translation and the compilation of foreign language glossaries by machine.
- h. Eighth Meeting: The mechanized use of symbolic logic for inductive and deductive reasoning in the solution of problems involving non-numerical concepts - the so-called "digitalizing" of the reasoning process input. The application of such techniques to intelligence problems is manifested in the ACSI-MATIC program.

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- i. Ninth Meeting: The development of mobile or miniaturized digital computers for field or other use has progressed to the point that intelligence agencies need to be aware of capabilities. A case in point is the LEFRECHAUN computer developed by Bell Telephone Laboratories or the MOBI-DIC of the Army.
- j. Tenth Meeting: The last quarter of the year would be occupied with plans and programs for future research in automation in response to intelligence information handling requirements. An overall objective of the Subcommittee for the whole year would have been to be alert for possible processes which could be automatized, but for which no equipment now exists. This meeting would consist of reports by Army, Air Force and State representatives.
- k. Eleventh Meeting: Continuation of reports by Subcommittee members on identified requirements for mechanization of routine processes. Reports to be presented by Navy, NSA and CIA.
- l. Twelfth Meeting: Preparation of annual report to main committee on highlights of the year's work and plans for second year's activities.

The principal subject for discussion each meeting would be presented by a member of the Subcommittee. By assigning these subjects in advance, maximum benefit will be obtained without unduly burdening any member.

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